



-  Tribal Lands
-  Drainage Boundary



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Missouri River - Poplar Drainage

Physical Description

The Missouri River Poplar drainage includes the Missouri River from Fort Peck Dam downstream to its confluence with the Poplar River, Prairie Elk Creek, Wolf Creek, Redwater River, and Poplar River. The watershed encompasses approximately 4,000 square miles located in Valley, Roosevelt, Daniels, and McCone counties. The watershed includes private, state, and federal lands, including the majority of the Fort Peck Indian Reservation. Agriculture dominates the lands north of the Missouri River, with wheat farming being the dominant crop. Irrigated crops such as alfalfa and corn are grown within the valleys of the major rivers and streams. South of the Missouri River is a mix of rangeland dominated by native vegetation and dryland farming.

There are no natural lakes in the drainage that contain a fishery. However, there are numerous stock ponds with many managed as fisheries. The Fort Peck Dredge Cuts also have a fishery and are a series of lakes connected to the Missouri River, which were created by the hydrologic dredging that occurred with the construction of Fort Peck Dam. The Missouri, Redwater, and Poplar rivers contain sport fisheries that include a host of native and introduced fishes.

Fisheries Management

The Missouri River downstream of Fort Peck Dam holds a diverse assemblage of native and non-native fish species. Its proximity to the county seats of Glasgow and Wolf Point makes it a popular fishery in northeastern Montana. Native fish species targeted by anglers include sauger, channel catfish, shovelnose sturgeon, burbot, and paddlefish. Anglers also pursue several non-native game fish species including walleye, northern pike, and rainbow trout. The Missouri River is managed as a wild fishery, with no stocking of game fish currently taking place. Historic fish stocking in the river combined with ongoing stocking in Fort Peck Reservoir have significantly influenced the river fish assemblage. These species include walleye, Chinook salmon, northern pike, yellow perch, and largemouth bass. Today, this reach of the Missouri River is home to over 50 species of fish, which consists of at least 31 native species and a minimum of 19 non-native species.

Angling on the Missouri River occurs year-round with spring and summer months being the most popular. Anecdotal evidence suggests angling pressure within this drainage is driven primarily by the walleye fishery. Further, limited tag return and sampling data suggests walleye moving upstream from Lake Sakakawea in North Dakota heavily influence angler success, especially during spring and early summer months. FWP intendeds to conduct further research identifying the contribution of Lake Sakakawea walleye to the Missouri River fishery. Although ice fishing does occur on the Missouri River, it is limited to a few areas where good ice forms.

The Fort Peck Indian Reservation borders a large proportion of the north side of the Missouri River. The Fort Peck Tribes and the State of Montana have agreed to be consistent with harvest regulations. Anglers fishing on boundary waters (waters adjacent to the Fort Peck Reservation) are allowed one daily bag limit regardless of if the angler possesses a state or tribal fishing license. Special harvest regulations are in place for paddlefish and trout. Only one paddlefish can be harvested per year and anglers are required to have a yellow tag to fish in the Missouri River downstream of Fort Peck Dam or the

Yellowstone River. An archery-only season for paddlefish occurs in the Fort Peck Dredge Cuts, where anglers are allowed one fish per year and a blue tag is required. Limited harvest data exists for paddlefish harvested under a tribal license, therefore, FWP proposes to work with the Fort Peck Tribes to monitor and quantify harvest from the Missouri River.

The Redwater River runs south to north through McCone and a portion of Dawson County. The Redwater River enters the Missouri River at river mile 1,682, across the river from the town of Poplar. Game fish present include channel catfish, sauger, northern pike and walleye. The Redwater River hosts 21 native and nine non-native species. Some of the native nongame fish include western silvery minnow, plains minnow, sturgeon chub, flathead chub, fathead minnow, northern redbelly dace, river carpsucker, bigmouth buffalo, smallmouth buffalo, shorthead redhorse, white sucker, goldeye and brook stickleback.

Channel catfish and northern pike are popular game fishes that anglers target in the Redwater River. During spring and early summer, anglers fish for channel catfish and sauger in the lower portion of the river. Nickwall crossing, which is situated approximately 1 mile upstream of the Redwater's confluence with the Missouri River precluded fish from upstream passage during most times until the spring of 2017, when FWP in combination with partners such as the Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS) placed a fish friendly crossing at this site.

The Poplar River drainage is situated on the north side of the Missouri River and encompasses portions of Roosevelt, Daniels, and Valley counties, as well as Saskatchewan, Canada. The East Fork meets with the Poplar River near the town of Scobey, while the West Fork enters the Poplar River just south of the Fort Peck Reservation, in Roosevelt County. A dam on the mainstem Poplar River just north of the Canadian border, has a great influence on the river's hydrograph. In the years before the dam, sauger and walleye were relatively abundant in the upper portions of the Poplar River. However, angler success has diminished since the construction of the Canadian dam. Current knowledge of the fishery is limited.

Limited knowledge of the Poplar River drainage and fisheries response to recent passage at Nickwall crossing warrants increased fisheries sampling in both systems. Seining of upstream reaches and associated tributaries is anticipated in future sampling seasons. Focus on fish assemblage composition and species distribution, with specific emphasis of non-native northern pike extent is necessary.

Kuester Reservoir, located entirely on private land, is the largest lentic fishery in the drainage at 66 acres. Recently, FWP has undertaken management of this body of water and will continue to manage the fishery going forward. Kuester Reservoir currently contains only yellow perch. In spring 2023, a fish transfer of adult male walleye is proposed and could provide additional angling opportunity. Long term monitoring, including periodic creel surveys will occur to better understand angler use and success of management efforts.

Several additional prairie ponds within the drainage are stocked with game fishes to provide fishing opportunities. Deeper ponds have been stocked with game fish that are meant to be self-sustaining, such as yellow perch, largemouth bass, and bluegill. Shallower ponds that tend to winter kill are often stocked with hatchery produced rainbow trout. Many of the prairie ponds within the drainage are not currently viable fisheries, as drought conditions has reduced water levels and increased water temperatures. Anticipated actions because of current water conditions include dissolved oxygen monitoring, as well as altering stocking plans as needed.

Habitat

The construction of Fort Peck Dam significantly altered the habitat of the Missouri River. Fort Peck Reservoir acts as both a sediment and nutrient sink for the Missouri River, and therefore delivers sediment free and nutrient poor water to the Missouri River downstream of the dam. The dam prevents all fish from migrating upstream. The dam has also greatly altered the natural flow regime of the Missouri River by holding back spring freshets and discharging higher than natural flows during the winter months. Channel forming flows have been infrequent since the dam closed off the river in 1937. Fort Peck Dam provides hydroelectric power by drawing hypolimnetic reservoir water through its penstocks into the powerhouse. This cold water (up to 50° F colder than the Missouri River above Fort Peck Reservoir) is released throughout the spring and summer months suppressing water temperatures in the Missouri River for approximately 180 river miles. Although water temperature does rise with increasing distance from the dam, average water temperature in the lower Missouri River near its confluence with the Yellowstone River is 2° F colder than water upstream of Fort Peck Reservoir.

The altered habitat of the Missouri River due to Fort Peck Dam is evident in the presence and absence, as well as the relative abundance of native fishes. Several species, such as sturgeon chub and sicklefin chub, western silvery minnow, channel catfish, and stonecat, become more abundant with increasing distance downstream from Fort Peck Dam. Additionally, growth rates of fish species like sauger, channel catfish, and pallid sturgeon are slower in the Missouri River near Fort Peck Dam when compared to the lower Missouri or Yellowstone rivers. For some species like channel catfish, water temperatures may stay too cold to even meet minimum spawning requirements.

Large irrigation and municipal intakes are located on this section of the Missouri River in Valley County and on the Fort Peck Reservation. Several large water intakes are located on the Missouri River: Wolf Point, south of Wiota, Frazer, and Pickthorn Bay. The effect of these on fish populations of the Missouri River is unknown. In addition, nearly 200 floating irrigation pumps, from Fort Peck Dam to Lake Sakakawea, take water from the river. FWP recommends fish screens for these pumps, and these are mandated through the local conservation districts.

The largest habitat alteration to the Poplar River system has been the construction of a dam for a power plant located in Saskatchewan, Canada. This dam has significantly altered the natural flow regime of the Poplar River. In addition, irrigation withdrawals greatly impact the system. There are several periods throughout the year that the Poplar has little to no water flowing at its mouth.

Special Management Issues

Pallid Sturgeon Recovery and Fort Peck Test Flows

FWP has been collaboratively working with several federal and university partners on pallid sturgeon recovery efforts since federal Endangered Species Act (ESA) listing in 1990. Management plans and conservation efforts for pallid sturgeon have been developed and implemented through a USFWS-coordinated Recovery Team that includes state and federally appointed staff. The USFWS is the lead agency on recovery and in 2018 issued a [Biological Opinion](#) on the Operation of the Missouri River Mainstem Reservoir System, the Operation and Maintenance of the Bank Stabilization and Navigation Project, the Operation of Kansas River Reservoir System, and Implementation of the Missouri River

Recovery Management Plan. The 2018 Biological Opinion supersedes previous biological opinions (2003 and 2000). The 2018 Biological Opinion concluded that the proposed actions on the Missouri River are not likely to jeopardize the pallid sturgeon, with the understanding that the USACOE had committed to a suite of prioritized actions that will have overall beneficial effects on pallid sturgeon. One of these management actions was a test at Fort Peck Dam on whether increased flows may have a positive effect on pallid sturgeon spawning and recruitment.

Through years of scientific studies and monitoring conducted by a host of entities, including FWP, the leading hypothesis for the lack of recruitment in pallid sturgeon in the Missouri River downstream of Fort Peck Dam and the Yellowstone River is the lack of available riverine habitat for pallid sturgeon early life history.

When pallid sturgeon eggs hatch, they become pre-larva or free embryos (free of embryonic membrane) that are for the most part at the mercy of the river current. These free embryos are still utilizing their yolk sacks for energy and are not actively foraging. They drift along the bottom of the river while they develop into larvae that are capable of benthically orientating themselves and begin feeding on invertebrates. The time this developmental process takes is highly dependent on water temperature and exhibits a negative relationship where the higher the water temperature they are exposed to the less time development takes. Although development time is variable depending on water temperature, these free embryos need between 5 and 9 days to develop into exogenously feeding larvae. Since they need such a long time to drift, they in turn need a long distance of free-flowing river.

Currently most of the pallid sturgeon that spawn in the lower Missouri and Yellowstone rivers do so near the headwaters of Lake Sakakawea, ND. Studies have indicated that the headwaters of Lake Sakakawea may be acting as a biological sink for any free embryos drifting in the river system. Free embryos are likely drifting into the low velocity areas of the reservoir headwaters where they settle out in the mud and the deltas. These benthic areas covered in mud and muck are inhospitable to the fragile pre-larva due to low oxygen levels. Therefore, to give pallid sturgeon free embryos enough time and distance to develop into larva that can swim and eat on their own before reaching the headwaters, the adults need to spawn further upstream than where they currently are.

On the Missouri River, data over the years have indicated that the controlled flows from Fort Peck Dam may be inhibiting the spring migration of pallid sturgeon up the Missouri River. In the few years that spring flows have been higher than the operational norms, pallid sturgeon have migrated upstream. Biologists identified spawning in the Missouri River near the Fort Peck Dam project area during the historically high flows of 2011. Similarly, other higher than average flow years such as 2018 also had a positive response from migrating pallid sturgeon. In addition, biologists have been monitoring hatchery stocked juvenile pallid sturgeon in the Missouri River over the past 20 years. These monitoring efforts indicate that suitable habitat does exist in the river system to grow pallid sturgeon from juveniles to sexually mature adults.

Large scale pallid sturgeon free embryo drift studies have been conducted multiple times on the Missouri River over the past 20 years. These studies take free embryos produced in a hatchery environment and place them in the Missouri River. Scientists are then able to track the downstream movements and growth of free embryos over the length of the Missouri River. These studies have shown that if pallid sturgeon free embryos are placed in the river a portion of them will recruit to older age classes. Because it is now known that free embryos can survive and grow in the Missouri River if

placed far enough up stream, the next question is whether pallid sturgeon will spawn in the upper reaches of the Missouri River near the Fort Peck Dam project.

Based on decades of research, the USACOE completed an [Environmental Impact Statement](#) (EIS) for Fort Peck Dam during 2021. The purpose of the EIS is to assess the capacity of test flows from Fort Peck Dam to promote the growth and survival of pallid sturgeon. The EIS describes the formulation of alternative plans, presents analyses of predicted benefits and environmental impacts; identifies a preferred alternative, discusses uncertainties, and considerations for implementation. The Final EIS was filed with the Environmental Protection Agency in September and the review period ended on October 25th, 2021.

On November 12, 2021, the USACOE issued a Record of Decision (ROD) on Fort Peck Dam Test Release Environmental Impact Statement Fort Peck Dam, Montana. Within the ROD the USACOE identified its preferred alternative. To avoid and minimize some of the adverse effects associated with the test flow, it would only be implemented in years when the hydrological conditions are favorable to stakeholders. Because the test flow is experimental, it is anticipated that the test flow would only be run 3-5 times. Due to the current drought conditions of the Missouri River Basin, it is not yet clear what year flow tests will be conducted.

When implemented, the test flow would consist of four components: attraction, retention, spawning and drift. Attraction flows would begin around April 16th with peak flows approximately twice as large as the typical spring release from Fort Peck Dam. Following attraction flows, retention flows will be approximately 1.5 times larger than typical flows and would persist until May 28th. On May 28th the release will increase over a series of days until it reaches approximately 3.5 times the normal spring flow. The spawning flow of 3.5 times the normal would be held for 3 days. After spawning, flows will be decreased by 1,000 cfs per day for 12 days and then reduced by about 3,000 cfs a day until the target drift flow of 8,000 cfs is obtained. All increases and decreases will be conducted over a series of days. All flow calculations for the test will be conducted at the Wolf Point U.S. Geological Survey (USGS) gauging station. To meet the flow objectives, water may be released over the Fort Peck Spillway. However, since flow will be conducted at Wolf Point, the flow will be made up of water coming through the Fort Peck powerhouse, the Milk River and other smaller tributaries and spillway flows.

The USACOE has several test flow constraints to avoid and/or minimize impacts to stakeholders. The test flows can only occur in a water year with less than the upper quartile of runoff. This is to make sure the test flows do not coincide with a high-water year which would potentially lead to flooding. Fort Peck Reservoir elevation will need to be at least 2,227 ft msl, which will make sure the reservoir does not drop too low. There will be flow limits at both Wolf Point and Culbertson gauging stations of 35,000 cfs. This is to reduce the potential of flooding landowners and municipalities. Garrison Reservoir (Lake Sakakawea) cannot have a pool elevation over 1,850 ft msl, to reduce the chances of having to spill water at Garrison Dam. There are also maximum river elevations that can occur near Williston, ND to decrease the chance of flooding. In addition, to reduce the amount of bank sloughing and to make it easier on irrigators to move their pumps, the maximum flow reduction rate during a flow test cannot exceed 3,000 cfs per day.

During and after the test flows, monitoring of the physical and biological responses will occur. Bank erosion, water intakes, pre and post water elevation profiles, pre, during, and post aerial photography and several aspects of monitoring the spillway will occur. Biological sampling will be conducted by FWP, the USGS and the USFWS. Monitoring of pallid sturgeon will be extensive and will include monitoring

movements, spawning, production of free embryos, recruitment to the larva stage and over several years monitoring of potential recruitment to older age classes.

Missouri River Fishery Monitoring

Monitoring of species assemblages in the Missouri River will expand going forward using a variety of methods including netting, hook and line, and spring and fall electrofishing. Targeted sampling for burbot, sauger, walleye, catfish, paddlefish, and other species will be developed and refined to identify limiting factors to populations. A large-scale fish tagging effort, including implanting radio tags, will occur as part of these efforts. Data will be used to understand population dynamics, movement, age and growth, and angler exploitation.

Dredge Cut Archery Fishery

Increased monitoring of paddlefish within the mainstem Missouri River and Fort Peck Dredge Cuts will occur going forward. Collection and subsequent tagging of adult paddlefish will allow for insights into potential mixing of paddlefish stocks among fish residing in Lake Sakakawea, the Missouri River, and the Fort Peck Dredge Cuts via telemetry efforts and angler tag returns. Additionally, aging structures will continue to be collected from angler harvested paddlefish during the mandatory reporting period. A reward program is currently in place for anglers that submit a dentary sample, and that program is expected to continue.

Native Species Conservation

Several Species of Special Concern exist within the Poplar Drainage. Species such as pallid sturgeon, paddlefish, sauger, sicklefin chub, sturgeon chub, and blue sucker are tied to the mainstem Missouri River, while pearl dace and northern redbelly dace are found in tributaries. While the mainstem Missouri River has had a lot of survey data collected over the past 20 plus years, relatively few surveys or studies have been conducted on tributary streams within the Poplar drainage. Repeating survey work from the early 2000s on these prairie systems is needed to update fish population status and develop management strategies. Once species are identified, specific habitat actions may be warranted to increase the likelihood of persistence.

Rainbow Trout below Fort Peck

Due to low abundance and questions surrounding recruitment, investigations into trout spawning activity below Fort Peck Dam will continue. Redd counts will be conducted in spring for rainbow trout and fall for brown trout. Recent anecdotal observations suggest rainbow trout recruitment is occurring below Fort Peck Dam. Active redds were observed throughout spring 2021 and 2022, and large numbers of young-of-year rainbow trout were observed during fall 2022. Additional study is needed to provide information relating temperature, flow, and other biotic and abiotic factors to successful trout recruitment below Fort Peck Dam.

FISHERIES MANAGEMENT DIRECTION FOR MISSOURI RIVER - POPLAR DRAINAGE

Water	Miles/Acres	Species	Recruitment Source	Management Type	Management Direction
Missouri River - Fort Peck Dam to the confluence with the Poplar River	92 miles	Pallid sturgeon (N)	Wild/ Hatchery	Conservation	Restore a self-sustaining population of pallid sturgeon in the Missouri River. Assist in monitoring before, during and after the Fort Peck flow test.
		Paddlefish (N)	Wild	Restrictive Regulations	Continue to allow the unique opportunity for snagging in the Missouri River. Monitor populations and angler harvest. Work with Fort Peck Tribes to better understand harvest.
		Burbot (N)	Wild	Conservation	Better understand population dynamics and angler exploitation.
		Shovelnose sturgeon (N), Channel catfish (N)	Wild	General	Monitor populations to better understand how operations of Fort Peck Dam and the Missouri River's tributaries influence production, recruitment, and population structure.
		Sauger (N)	Wild	Conservation	Monitor population to ensure sustainable harvest. Evaluate distribution and relative abundance with regard to walleye. Collect genetic samples to evaluate hybridization with walleye.
		Rainbow trout	Wild	Restrictive Regulations	Monitor population to make sure overexploitation does not occur. Better understand habitat needs and how closed section is impacting recruitment. Determine if seasonality of closure is warranted.
		Walleye	Wild	General	Emphasize angler harvest to minimize potential for hybridization with native sauger. Monitor relative abundance.

Water	Miles/Acres	Species	Recruitment Source	Management Type	Management Direction
		Native nongame fishes (N)	Wild	General	Monitor native nongame fishes to better understand how operations of Fort Peck Dam and tributaries influence these populations. Evaluate use as bait by anglers. Continue to educate public of proper fish identification to limit use of illegal species.
Habitat needs and activities: Work towards modifying operations at Fort Peck Dam that are beneficial for spawning and growth of pallid sturgeon and other native species. Minimize further anthropogenic impacts to habitat. Work with irrigators to ensure pumps remained screened.					
Fort Peck Dredge Cuts	542 acres	Paddlefish (N)	Wild	Restrictive Regulations	Continue to allow the unique opportunity for bow fishing in the Dredge Cuts. Improve knowledge relating to the population dynamics of these fish. Gain insight into movement and mixing of Dredge Cut fish with Missouri River fish and Sakakawea stock.
		Sauger (N), Channel catfish (N), Walleye, Northern Pike, Burbot (N)	Wild	General	Maintain a quality fishery (size and catch rate) for both native and non-native game fishes. Continue to monitor these populations.
Habitat needs and activities: Lack of littoral habitat may require increased monitoring of young-of-year fishes.					
Redwater River	153 miles	Channel catfish (N), Sauger (N)	Wild	General	Maintain current populations. Inventory current distribution.
		Native nongame fishes (N)	Wild	Conservation	Protect habitat for native fishes. Evaluate fish assemblage in response to Nickwall Crossing construction.
Habitat needs and activities: Evaluate anthropogenic impacts to streambanks. Inventory potential barriers to fish passage.					
Poplar River (Canadian border to mouth).	107 miles	Sauger (N), Channel catfish (N), Northern Pike	Wild	General	Begin to understand fish assemblage and population size of game fishes. Determine extent of northern pike distribution.

Water	Miles/Acres	Species	Recruitment Source	Management Type	Management Direction
		Native nongame fishes (N)	Wild	Conservation	Inventory current fish assemblages. Evaluate use of native non-game fish as bait by anglers. Continue to educate public of proper fish identification to limit use of illegal species.
Habitat needs and activities: Evaluate anthropogenic impacts to streambanks. Inventory potential barriers to fish passage.					
Kuester Reservoir	66 acres	Walleye, Yellow Perch	Transfer	General	Establish a sport fishery via wild fish transfers. Monitor angler use in response to transfers.
Habitat needs and activities: Evaluate potential need for artificial rearing habitat. Work with landowner to potentially rebuild and/or enhance current dam.					
Prairie Ponds	Various	Yellow perch, Largemouth bass, Northern Pike, Black Crappie, Bluegill	Wild	General	Continue to monitor these populations and stock/transfer fish when necessary. Evaluate age structure of yellow perch throughout drainage.
		Rainbow trout	Hatchery	Put- Grow- and- Take	Continue to stock prairie ponds as put and take fisheries. Evaluate angler use and which ponds should be stocked.
		Native non-game fishes (N)	Wild	Conservation	Evaluate use of native non-game fish as bait by anglers. Continue to educate public of proper fish identification to limit use of illegal species.
Habitat needs and activities: Look for opportunities to increase quality of habitat by increasing depth of reservoirs, building new reservoirs, and other habitat improvements. Explore applicability of windmill aerator systems at prairie ponds with winterkill concerns. Utilize artificial habitat structures in ponds where rearing habitat is limited. Alter stocking plan as needed in response to drought.					

